GENERAL PRINCIPLES
Practice Questions

INSTRUCTIONS: Have a highlighter and a colored pen handy. As you study through the text, look for the answers to the following questions and mark them in the book or on the sheet provided. Also, as you study through the text, ask yourself, *"If I know this information will I be a better applicator?"* If you answer *"YES"* that information would also be a good question for the test. Make a note of it ! In order to allow for quick grading, most questions on the test are in the form of Multiple Choice or True and False; but this is not necessarily so. Take the time to answer the study questions at the end of each Chapter. These questions have not been repeated here but would be good practice. See the separate CALIBRATION and LABEL worksheets that have been prepared. Remember that when answering TRUE/FALSE questions, it must ALL be true if TRUE. If any small part of the statement is FALSE, the answer is FALSE.

1. Laws and Regulations are throughly covered on the Laws and Regulations Exam. Therefore Laws and Regs are given a low priority on the General Exam. But studying the first three Law & Reg Chapters might be helpful as you study for the LAW & REG Exam

Chapter 4 - Integrated Pest Management

2. Define Integrated Pest Management (IPM) (pg.1).

3. Can pesticide use in a judicious (or wise) manner be included in an IPM approach?

4. Define an economic injury level.

5. Explain economic threshold.

6. Explain biological control as part of an IPM program.

7. Give examples of cultural controls.

8. Explain why is it important to know the susceptible stage of the crop when determining economic loss.

Chapter 5 - Pests

9. Explain why it is important to accurately identify the pest before starting a treatment program.

10. List the two characteristics that all adult insects have in common.

11. How many legs do insects have?

12. Are there more harmful (or pest insects) than beneficial and harmless insects?

13. What is the series of changes insects go through as they develop from the egg to adulthood ?

14. Define complete metamorphosis.

15. Compare incomplete and gradual metamorphosis to complete metamorphosis.

16. Define instar.

17. Explain why it is important to know the life cycle of a pest species.

18. How many legs do adult spiders, mites and ticks have?

19. How many body regions do adult spiders, mites and ticks have?

20. Name a type of primitive plant that lacks chlorophyll and cannot make it's own food.

21. Define nematodes.

22. Define annual, perennial, and biennial.

23. Compare and differentiate between grasses, sedges, and broadleaf weeds.

Chapter 6 - Types of Pesticides

24. Define systemic.

25. Define pheromone.

26. Define chitin inhibitors.

27. Define insect growth regulators (IGR's).

28. Define nonselective herbicides.

29. Define selective herbicides.

30. Define preemergence.

31. Define postemergence.

32. Define a contact herbicide.

33. Define rodenticide, avicide, nematicide, and molluscicide.

34. Define defoliant and desiccants.

Chapter 7 - Formulations

35. Define formulation (this is not clearly done in the text).

36. List 10 types of formulations are listed in the text?

37. What is meant by D, G, RTU, EC, F, WP, SP, M (there are others but this text does not cover all types of formulations)

38. Explain how a person would use a RTU pesticide.

39. Name disadvantages of dust formulations.

40. List the major advantages and disadvantages of using insecticide granules.

41. What animals are granules especially hazardous to if eaten?

42. Wettable powders can mix in water to form _____ .

43. Define suspension.

44. Compare WP to WDG and DF formulations.

45. Define emulsion.

46. List advantages and disadvantages of emulsifiable concentrates.

47. Define solution.

48. This is an example of a poor question - how would you answer it based on the text?
"Emulsifiable concentrates are very suitable for high pressure, high volume application because only moderate agitation in the tank is required. (True or False)"

49. Name a type of pesticide that is active in the form of a poisonous gas.

50. Explain special precautions that must be considered when using a poison bait.

Chapter 8 - The LABEL

51. Do the separate Label Exercise provided

Chapter 9 - Toxicity of Pesticides

52. The effect of a pesticide on your health depends on several factors. The most important factor is called the dose/time relationship. Explain what dose/time relationship means.

53. Define exposure.

54. Define acute (toxicity and exposure).

55. Define chronic (toxicity and exposure)

56. List three primary routes of entry of pesticides into your body.

57. Are all people affected the same way by pesticide?

58. Define mutagenic, teratogenic, and carcinogenic.

59. Understand and interpret the meaning of LD_{50}.

60. Explain the meaning of ppm, ppb, and ppt.

61. What chronic health effects does a repeated exposure to sub-lethal amounts of organophosphate and/or carbamate pesticides have?

62. Make a table showing toxicity category, signal words and approximate oral dose that can kill a person.

Chapter 10 - Residue Tolerance & Registration

63. Define residue.

64. Define tolerance.

65. Can a crop that has a pesticide residue on a crop in excess of the Environmental Protection Agency (EPA) tolerance limit be sold?

66. When you follow label instructions, residues should fall below the set tolerance (True or False).

Chapter 11 - General Safety Precautions

67. Explain why should pesticides never be carried inside a truck cab.

68. List four precautions to take while mixing and filling.

69. List four precautions to take during application.

70. Give the water temperature (in degrees Fahrenheit) that should be used when washing pesticide soiled clothing.

71. Summarize steps in handling and laundering pesticide contaminated clothing.

Chapter 12 - Protective Equipment and Personal Safety

72. Before using a pesticide, name the source of specific information on the needed personal protective equipment (PPE).

73. List the clothing and PPE needed to apply highly toxic chemicals.

74. Name as many routes of entry for pesticides into your body as you can find or think of.

75. How does pesticide poisoning most often occur?

76. Which of these routes of entry go together. (skin, mouth, nose to lungs) - (ingestion, inhalation, dermal).

77. Nitrate, natural rubber, neoprene, leather, cotton, and butyl are all materials used for protective gloves. Which two should never be used with pesticides? Which one can be used with dry but not wet material? Which three offer good protection for both dry and liquid pesticides?

78. When you finish spraying, tell what should be done with the gloves prior to removing them.

79. Name the four parts of the body ***least*** likely to absorb pesticides. Name four parts of the body ***most*** likely to absorb pesticides.

80. Explain when a filter should be changed.

81. Explain when a respirator cartridge should be changed.

82. Tell when a full-face gas mask should be used.

83. Name the blood enzyme that persons handling and applying carbamate and organophosphate pesticides should consider having regular blood tests for.

84. Pesticide mixers and loaders handle pesticide concentrates, do they need protective equipment more or less than a worker who does not handle concentrates?

Chapter 13 - Pesticide Poisoning & First Aid

85. Compare symptoms of mild poisoning or early symptoms of acute poisoning to symptoms of severe or acute poisoning. Pick out the clear differences.

86. Compare symptoms of poisoning to symptoms of shock and or heat stress and be able to differentiate between each.

87. List four situations where vomiting should NOT be induced.

88. How do you find out quickly rather or not to induce vomiting?

89. List the symptoms associated with shock.

90. Name the first thing you should do when you suspect pesticide poisoning.

91. Tell the first thing that should be done when pesticide is spilled on the skin.

Chapter 14 - Ecology and Environmental Protection

92. Define drift.

93. Explain the difference between physical particle drift and vapor drift.

94. Explain the relationship between droplet size and the potential to drift.

95. Low pressures tend to produce more _____ droplets while high pressures tend to produce more _____ droplets.

96. What is the effect of high air temperature and low humidity on the vaporization of volatile pesticides?

97. List 8 ways to help avoid drift and therefore help reduce possible off site damage.

98. Name two basic types of processes that affect pesticides after they are applied.

99. List four transfer processes.

100. List three ways that chemicals are degraded or broken down.

101. If a pesticide dissolves easily in water, is it more or less likely to leach through the soil into

groundwater (assuming it is not positively charged and adsorbed tightly to the soil)?

102. Rank the potential for pesticides to leach through these soils into groundwater from most likely (1) to least likely (4) to leach.(clay ____; highly organic ____; coarse, sandy ____; loamy ____)

103. Learn the 15 ways to minimizing pesticide pollution of groundwater.

104. Compare the toxicity of different types of formulations to bees.

105. When pesticide is back-siphoned into a water source, serious injury may occur in subsequent users of the water source. Describe how back siphoning can be prevented.

106. Explain how FWS determines if a species is endangered.

107. Explain the difference between *endangered* and *threatened* species.

Chapter 15 - Filling and Mixing Practices

108. Describe the proper way of opening paper containers.

109. Mixing and loading concentrates is the most hazardous pesticide work. (True or False)

110. List the 7 steps to follow when cleaning up a spill. Why are the first two most important?

111. Describe how back siphoning can be prevented.

112. Describe a *closed system*. What is the big advantage of using a closed system?

113. Name two types of closed systems.

114. Tell what should be done before mixing two or more chemicals.

115. When mixing two or more pesticides, what is meant by compatibility?

116. Explain the function and relationship between adjuvants, additives, spreaders and stickers.

Chapter 16 - Calculations for Mixing Pesticides (see the Calibration Practice Set and practice examples in the text)

Chapter 17 - Equipment

117. Define an air blast sprayer. What is it's special use? What is the potential for this spray to drift?

118. Compare roller, centrifugal, and piston pumps on volume of liquid applied and relative pressure.

119. Order these types of nozzle from most durable for highly abrasive and corrosive chemicals (1) to least durable (4). (BRASS ___; STAINLESS STEEL ___; PLASTIC ___; CERAMIC ___ ; HARDENED STAINLESS STEEL ___)

120. Which is the most effective way to clean clogged nozzle - - - a small metal file or a soft bristled brush? Explain.

121. Explain the function of an agitator.

122. Explain how nozzle size affects droplet size and the potential for drift.

123. Explain how spraying pressure affects droplet size and the potential for drift.

124. Explain the importance of understanding the capabilities of your application equipment.

125. Describe results in the field that would be characteristic of poorly calibrated application equipment.

Chapter 18 - Calibration (see the Calibration Practice Set and be sure to practice **examples in the text**)

126. When a nozzle tip has a flow rate that is more or less than the average of the nozzles in the system the nozzle should be replaced. Name the percent difference when a nozzle tip should be changed.

127. What is necessary to correct spray nozzle output when the nozzle tips have been damaged by the sanding action of dirt and abrasive spray mixtures?

Chapter 19 - Weather-wise Application

128. Explain the cause of turbulence. As temperature differences increase between ground and upper air turbulence tends to (increase, decrease).

129. Should you apply pesticides when turbulence is high?

130. Describe the air conditions in an inversion. What can be used as an indicator of an inversion?

131. What condition is described when the air near the ground is warmer than the air above?

132. When the water (or other carrier) in a spray droplet completely evaporates leaving pesticide molecules in the air to drift, the text calls this _____ drift.

133. If spray droplets are blown by the wind during application, this is called _____ drift.

134. What conditions (of wind speed and humidity) are generally present in the early morning and evening?

135. Volatilization of volatile pesticides (increases or decreases) as the temperature becomes higher. Explain.

Chapter 20 - Disposal

136. A good method for disposing of rinsewater is to use it in a future spray mix of the same pesticide (TRUE or FALSE).

137. Disposable plastic, and metal containers for liquid pesticides should be reused for storing a different pesticide after emptying (TRUE or FALSE).

138. Empty pesticide containers are not really “empty”. They still contain pesticide residue. List steps that should be followed to prepare the containers for disposal.

139. When triple-rinsing an empty pesticide container, it should be filled to at least what level with water or other diluent for each rinse? Where is this rinsate used.

140. Explain why it is dangerous to store pesticides in improper containers.

141. Is it LEGAL or ILLEGAL to burn pesticides or their containers?

Chapter 21 - Storage

142. What other things can be stored in the same storage space as pesticides? List some materials that must never be stored in the same storage space with pesticides.

143. Liquid pesticides should be stored where the temperature range does not rise above

_____ or fall below _____ degrees Fahrenheit.

144. List groups that might need access to a pesticide list and a floor plan of the pesticide storage facility.

145. Explain why is it important to have a current pesticide inventory list available.

146. Explain what should be done first when a pesticide is spilled.

Chapter 8 - The Label (Be prepared to use a label and work through Label worksheet as well)

147. Each product should be read each time you plan to use it. Are all product labels are the same?

148. Define phytotoxicity.

149. Define "Restricted-use pesticide"

150. Every label has a *signal word* required by EPA - DANGER, WARNING, and CAUTION. (Which of these refer to slightly toxic, highly toxic, and moderately toxic pesticides?)

151. Label instructions on “days to harvest” or “days to slaughter” refer to the minimum number of days between application of the pesticide and harvesting the crop or slaughtering an animal for meat (Ture or False).

152. Before you apply a pesticide, you should _____ _____ _____.

Work through the Label Worksheet.

There will be calibration problems on both the General and Category Exams

So be sure to practice

CALIBRATION

If you have questions, Please contact:

Mary Ketchersid
phone 979-845-6531
FAX 979-845-6251
m-ketchersid@tamu.edu